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TECHNICAL NOTES
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ALASKA FOREST RESEARCH CENTER
U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

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Measuring Log Lengths

Southeast Alaska scaling normally requires measuring lengths of long logs in flat rafts with an 8- or 10-foot bamboo pole. The constant care needed to assure accurate length measurements and the continual back bending involved in this procedure led to the testing of an experimental wheel. The model tested had 16 points spaced 3 inches apart giving 4 feet per revolution. One point was weighted to automatically zero the wheel.

Comparisons of lengths obtained with the wheel, bamboo pole and steel tape were made. Forty-five spruce and hemlock logs in a flat raft ranging from 32 to 151 feet were measured. Comparative results follow:

	Pole	Wheel	Tape
Total lineal feet	3,824.25	3,833.1	3,834.4
Sum of differences from taped length, feet	13.0	8.8	
Aggregate difference from tape, feet	-10.2	-1.3	
Aggregate difference in percent	- 0.3	-0.04	
Average deviation per log, feet	0.3	0.2	
Average log length, feet	84.98	85.18	85.21

The conclusions are that the wheel gives very accurate results, requires no more time than the pole, but in its present form it is too difficult to count revolutions for practical use. A model equipped with a tallying device is being considered.

Random Plot Cruising

To learn something about the basic needs for making extensive timber surveys, using aerial photo techniques and random sampling in Southeast Alaska, the Forest Research Center tested the method on the 20,000-acre Harris River watershed in Kasaan Bay.

A 2-inch per mile planimetric map was made from 1/40,000 scale air photos using a radial line plotter. Control maps were not available. Thirty-three composite plots consisting of three 1/5-acre sub-plots were selected by random numbers on 4,540 acres estimated to be merchantable from the photographs.

Field sampling by 1-, 2- and 3-man crews revealed that:

1. Sampling required 1 man day per 252 acres using 2-man crews.
2. Two-man crews are recommended for this region of dense cover, rough topography and isolation.
3. Control maps are necessary to assure correct areas and extent of types. Scaled distances and direction on the uncontrolled map resulted in wasted time and effort in reaching some plot locations.
4. Delineation of merchantable types is inaccurate on 1/40,000 scale photos. Much larger scale photos are needed for detailed work.
5. Getting cruisers on and over the ground is costly and difficult in Southeast Alaska.

March 1951 GPO 985317 L. W. Zach